

measurement values determined in-situ compared, for example, with the theoretical values according to equation (1) or equation (2) and, herefrom, the thickness of the respective partial layer is directly determined. This highly efficient procedure does not only omit the need for expensive and complicated measuring apparatus such as in-situ ellipsometer, but improved results are obtained since the laser to be coated is itself used as measuring instrument. The present invention permits the manufacture of antireflection coatings in large numbers and with the highest quality. The new process is not only applicable to the thickness of the previously applied layer; rather, the process according to the invention can also be used with any partial layer particularly by plotting a time behavior comparison.

In the Claims:

✓
Cancel claims 1 to 13.

Please amend the following claims as follows:

14. An apparatus for coating at least one of the front and rear facets of semiconductor laser diodes (lasers) with an anti-reflection layer of minimal rest reflectivity while monitoring, in-situ, at least one of laser parameters including laser light emitted from at least one of the front and rear facets of a laser, the electric voltage at a p-n junction of the laser, the quantum efficiency of the laser light emitted from at least one of the front and rear facet of the laser, and the threshold current of the laser, said apparatus comprising a receiver for containing lasers to be coated, a coating source disposed in said receiver, a support structure for supporting said lasers to be coated